

## General information

Entry name **HYAL4\_HUMAN**  
 Accession number **[Q2M3T9](#), [Q9UL99](#), [Q9Y6T9](#)**  
 Integrated 11-SEP-2007, UniProtKB/Swiss-Prot.  
 Sequence update 11-SEP-2007, sequence version 2  
 Annotation update 11-SEP-2007, entry version 16  
 UniSave **[Q2M3T9](#), [Q9UL99](#), [Q9Y6T9](#)**  
 UniRef100 **[UniRef100\\_Q2M3T9](#)**  
 UniParc **[UPI000006F62B](#)**

## Description and origin of the Protein

Description Hyaluronidase-4 (EC [3.2.1.35](#)) (Hyal-4) (Hyaluronoglucosaminidase-4).  
 Gene name(s) **HYAL4**  
 Organism source **Homo sapiens (Human)**.  
 Taxonomy Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutl  
 Haplorrhini; Catarrhini; Hominidae; Homo.  
 NCBI TaxID **[9606](#)**

## References

- [1] Csoka,A.B., Scherer,S.W., Stern,R.,  
**Expression analysis of six paralogous human hyaluronidase  
 chromosomes 3p21 and 7q31.**  
 (1999) *Genomics* **60**:356-361  
 Position NUCLEOTIDE SEQUENCE [MRNA], AND TISSUE SPECIFICITY.  
 DOI [10.1006/geno.1999.5876](#);
- [2] Hillier,L.W., Fulton,R.S., Fulton,L.A., Graves,T.A., Pepin,K.H., Wagner-McPherson  
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**The DNA sequence of human chromosome 7.**  
 (2003) *Nature* **424**:157-164  
 Position NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].

DOI [10.1038/nature01782](https://doi.org/10.1038/nature01782);

- [3] Scherer, S.W., Cheung, J., MacDonald, J.R., Osborne, L.R., Nakabayashi, K., Herbrick, Skaug, J., Khaja, R., Zhang, J., Hudek, A.K., Li, M., Haddad, M., Duggan, G.E., Fernand Christopoulos, C.C., Choufani, S., Kwasnicka, D., Zheng, X.H., Lai, Z., Nusskern, D., Z Nowaczyk, M.J., Teshima, I., Chitayat, D., Shuman, C., Weksberg, R., Zackai, E.H., Gr Rahman, N., Friedman, J.M., Heng, H.H.Q., Pelicci, P.G., Lo-Coco, F., Belloni, E., Sha Gusella, J.F., Bruns, G.A.P., Korf, B.R., Quade, B.J., Ligon, A.H., Ferguson, H., Higgin Lemyre, E., Farra, C.G., Kim, H.-G., Summers, A.M., Gripp, K.W., Roberts, W., Szatm Teebi, A., Minassian, B.A., Kere, J., Armengol, L., Pujana, M.A., Estivill, X., Wilson, M Boright, A.P., Zlotorynski, E., Kerem, B., Kroisel, P.M., Petek, E., Oscier, D.G., Mould, Rommens, J.M., Vincent, J.B., Venter, J.C., Li, P.W., Mural, R.J., Adams, M.D., Tsui, L  
**Human chromosome 7: DNA sequence and biology.**  
(2003) *Science* **300**:767-772

Position NUCLEOTIDE SEQUENCE [LARGE SCALE GENOMIC DNA].

DOI [10.1126/science.1083423](https://doi.org/10.1126/science.1083423);

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**The status, quality, and expansion of the NIH full-length cDI Gene Collection (MGC).**  
(2004) *Genome Res.* **14**:2121-2127

Position NUCLEOTIDE SEQUENCE [LARGE SCALE MRNA], AND VARIATION

Comments TISSUE=Cerebellum;

DOI [10.1101/gr.2596504](https://doi.org/10.1101/gr.2596504);

- [5] Jedrzejewski, M.J., Stern, R.,  
**Structures of vertebrate hyaluronidases and their unique endohydrolysis.**  
(2005) *Proteins* **61**:227-238

Position FUNCTION, AND 3D-STRUCTURE MODELING.

DOI [10.1002/prot.20592](https://doi.org/10.1002/prot.20592);

## Comments

### FUNCTION

Endo-hyaluronidase that degrades hyaluronan to smaller oligosaccharide

### CATALYTIC ACTIVITY

Random hydrolysis of 1->4-linkages between N- acetyl-beta-D-glucosamine and hyaluronate.

### SUBCELLULAR LOCATION

Membrane; Multi-pass membrane protein (Potential).

### TISSUE SPECIFICITY

Detected in placenta and skeletal muscle.

### SIMILARITY

Belongs to the glycosyl hydrolase 56 family.

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## Database cross-references

[AF009010](#); [AAC98883.1](#); -; mRNA.

	<a href="#">AC006029</a> ; <a href="#">AAD43186.1</a> ; -; Genomic_DNA.
	<a href="#">CH236947</a> ; <a href="#">EAL24331.1</a> ; -; Genomic_DNA.
EMBL	<a href="#">BC104788</a> ; <a href="#">AAI04789.1</a> ; -; mRNA.
	<a href="#">BC104790</a> ; <a href="#">AAI04791.1</a> ; -; mRNA.
UniGene	<a href="#">Hs.28673</a> ; -.
Ensembl	<a href="#">ENSG00000106302</a> ; Homo sapiens.
HGNC	HGNC: <a href="#">5323</a> ; HYAL4.
MIM	<a href="#">604510</a> ; gene.
PharmGKB	<a href="#">PA29574</a> ; -.
ArrayExpress	<a href="#">Q2M3T9</a> ; -.
	<a href="#">IPR013785</a> ; Aldolase_TIM.
	<a href="#">IPR002355</a> ; Cu_oxidase_Cu_BS.
InterPro	<a href="#">IPR006210</a> ; EGF.
	<a href="#">IPR013032</a> ; EGF_like_reg.
	<a href="#">IPR001968</a> ; Glyco_hydro_56.
	<a href="#">IPR001439</a> ; Glyco_hydro_56_PH20.
Gene3D	<a href="#">G3DSA:3.20.20.70</a> ; Aldolase_TIM; 1.
PANTHER	<a href="#">PTHR11769</a> ; Glyco_hydro_56; 1.
Pfam	<a href="#">PF01630</a> ; Glyco_hydro_56; 1.
	<a href="#">PR00846</a> ; GLHYDRLASE56.
PRINTS	<a href="#">PR00848</a> ; SPERMPH20.
ProDom	<a href="#">PD003549</a> ; Glyco_hydro_56; 1.
SMART	<a href="#">SM00181</a> ; EGF; 1.
PROSITE	<a href="#">PS00022</a> ; EGF_1; 1.
	<a href="#">PS01186</a> ; EGF_2; 1.

## Protein Existence

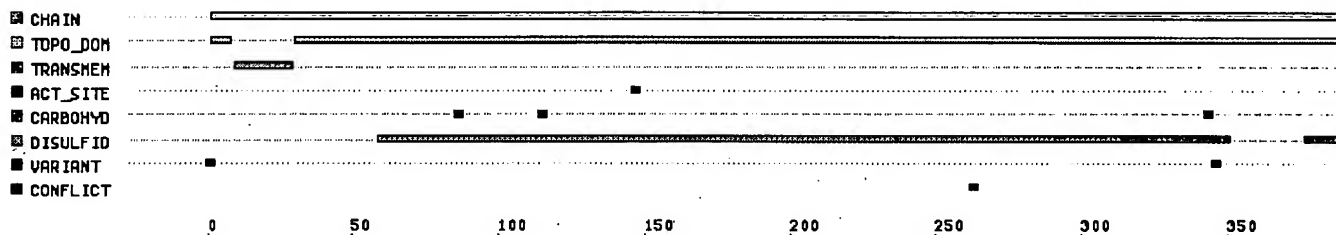
2: Evidence at transcript level;

## Keywords

[EGF-like domain](#); [Glycoprotein](#); [Glycosidase](#); [Hydrolase](#); [Membrane](#); [Polymorphism](#); [Transmembrane](#);

## Features

[Features compressed](#) | [Features expanded](#)



Key	Begin	End	Length	Description
<u>CHAIN</u>	1	481	481	Hyaluronidase-4. /FTId= <u>PRO_0000301999</u> .
<u>TOPO_DOM</u>	1	8	8	Cytoplasmic (Potential).
<u>TRANSMEM</u>	9	29	21	Potential.
<u>TOPO_DOM</u>	30	453	424	Extracellular (Potential).
<u>TRANSMEM</u>	454	474	21	Potential.
<u>TOPO_DOM</u>	475	481	7	Cytoplasmic (Potential).
<u>ACT_SITE</u>	147	147	1	Proton donor (By similarity).
<u>CARBOHYD</u>	86	86	1	N-linked (GlcNAc...) (Potential).
<u>CARBOHYD</u>	115	115	1	N-linked (GlcNAc...) (Potential).
<u>CARBOHYD</u>	343	343	1	N-linked (GlcNAc...) (Potential).
<u>DISULFID</u>	59	351	293	By similarity.
<u>DISULFID</u>	223	237	15	By similarity.
<u>DISULFID</u>	376	387	12	By similarity.
<u>DISULFID</u>	381	435	55	By similarity.
<u>DISULFID</u>	437	446	10	By similarity.
<u>VARIANT</u>	1	1	1	M -> V (in dbSNP:rs12672205). /FTId= <u>VAR_034935</u>
<u>VARIANT</u>	346	346	1	A -> S (in dbSNP:rs6949082). /FTId= <u>VAR_034936</u> .
<u>CONFLICT</u>	263	263	1	G -> C (in Ref. 1; AAC98883).

## Sequence information

Length: **481 aa**, molecular weight: **54249 Da**, CRC64 checksum: **9D530009AA89**

Display Format    ☒ FASTA   ☐ GCG   ☐ PIR   ☐ Swiss-Prot   ☐ Pretty

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>uniprot|Q2M3T9|HYAL4_HUMAN Hyaluronidase-4 (EC 3.2.1.35) (Hyal-4) (Hyaluronoglu
MKVLSEGLKLCVVQPVHLTSWLLIFFILKSISCLKPARLPPIYQRKPFIAAWNAPTDQCL
IKYNLRLNLKMFVIGSPLAKARGQNVTFYVNRNLGYYPWYTSQGVPINGGLPQNISLQV
HLEKADQDINYYIPAEDFSGLAVIDWEYWRPQWARNWNSKDVYRQKSRKLISDMGKNVSA
TDIEYLAKVTFEESAKAFMKETIKLGIKSRPKGLWGYYLYPDCHNYNVYAPNYSGSCPED
EVLRRNELSWLWNSSAALYPSIGVWVSLGDSENILRFSKFRVHESMRISTMTSHDYALPV
FVYTRLGYRDEPLFFLSKQDLVSTIGESAALGAAGIVIWGMNLTASKANCTKVQFVSS
DLGSYIANVTRAAEVCSLHLCRNNGRCIRKMWNAPSILHLPASYHIEASEDEFTVKGK
ASDSDLAVMADTFSCHCYQGYEGADCREIKTADGCSGVSPSPGSLMTLCLLLLASYRSIQ
L
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